

13411.00020

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:)
MICHOT, ET AL.) : Examiner: S. Kalafut
Continuation of) : Group Art Unit: 1745
Application No.: 09/390,642)
Filed: Herewith)
For: NOVEL MATERIALS USEFUL : November 9, 2001
AS ELECTROLYTIC SOLUTES)

Commissioner for Patents
Washington, D.C. 20231

[This application is a continuation of
Appln. No. 09/390,642, for which the
Issue Fee was paid on October 15, 2001]

PRELIMINARY AMENDMENT

Sir:

Prior to examination on the merits, kindly amend
the above-identified application as follows:

IN THE CLAIMS:

Kindly cancel Claims 1-5 and 7-25. Please amend
Claims 6, 26, 27, and 28 as shown below. A mark-up version
showing the changes made to the claims is attached hereto for
the Examiner's convenience.

6. (Amended) An ionic compound having a cation of the onium type with at least one heteroatom comprising N, O, S or P bearing the positive charge and the anion including, in whole or in part, at least one imide ion of the type $(FX^1O)N^-(OX^2F)$ wherein X^1 and X^2 are the same or different and comprise SO or PF, wherein the compound comprises at least an anion selected from Cl^- ; Br^- ; I^- ; NO_3^- ; $M(R^{10})_4^-$; $A(R^{10})_6^-$; $R^{11}YO_2^-$; $R^{11}YONZ^{1-}$; $R^{11}YOCZ^2Z^{3-}$; 4,5-dicyano-1,2,3-triazole; 3,5-bis(R_F)-1,2,4-triazole; tricyanomethane; pentacyanocyclopentadiene; pentakis(trifluormethyl)cyclopentadiene; and barbituric acid, and;

-M is B, Al, Ga or Bi;

-A is P, As and Sb;

- R^{10} is a halogen;

- R^{11} represents H, F, alkyl, alkenyl, aryl, arylalkyl, alkylaryl, arylalkenyl, alkenylaryl, dialkylamino, alkoxy or thioalkoxy, each having from 1 to 18 carbon atoms and being unsubstituted or substituted with one or more oxa, thia, or aza substituents, and wherein one or more hydrogen atoms are optionally replaced with halogen in a ratio of 0 to 100%, and eventually being part of polymeric chain;

- Y represents C, SO, S=NCN, $S=C(CN)_2$, PR^{11} , $P(NCN)R^{11}$, $P(C(CN)_2)R^{11}$, and when Y is $P(NCN)R^{11}$ or $P(C(CN)_2)R^{11}$, then $R^{11}YO_2$, $R^{11}YONZ^1$, and $R^{11}YOCZ^2Z^3$ become $R^{11}YO$, $R^{11}YNZ^1$, and $R^{11}YCZ^2Z^3$, respectively, an alkyl, alkenyl, aryl, arylalkyl, alkylaryl,

arylalkenyl, alkenylaryl having from 1 to 18 carbon atoms and optionally substituted by one or more oxa, thia or aza; a dialkylamino group $N(R^{11})_2$;

$-Z^1$, Z^2 , and Z^3 represent independently R^{11} , $R^{11}YO$ or CN , this group being optionally part of a polymeric chain.

26. (Amended) A method of using an electrolytic composition, comprising the step of:

carrying out chemical or electrochemical reactions involving soluble species in a medium comprising said electrolytic composition,

wherein said electrolytic composition comprises at least one ionic compound of low melting point having a cation of the onium type with at least heteroatom such as N, O, S or P bearing the positive charge and the anion including, in whole or in part, at least one imide ion of the type $(FX^1O)N^-(OX^2F)$, in combination with at least another component comprising a metallic salt, a polar polymer and/or an aprotic co-solvent.

27. (Amended) The method according to claim 26, wherein the composition is used as a medium for Diels-Alder, Friedel-Craft, mixed aldolization, condensation, polymerization, nucleophilic substitution, and electrophilic substitution reactions.

28. (Amended) The method according to claim 26, wherein the composition comprises a chiral onium cation allowing enantionselective reactions.

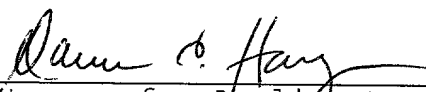
REMARKS

This application is a continuation of U.S. Appl. No. 09/390,642. Claims 6, 26, 27, and 28 are pending, with Claims 6 and 26 being independent. Claims 1-5 and 7-25 were canceled by this amendment, and Claims 6, 26, 27, and 28 were amended.

Claims 6, 26, 27, and 28 have been amended to improve their form. In addition, Claim 6 has been amended to correct minor errors contained in the formulas therein.

Applicant's undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 625-3500. All correspondence should continue to be directed to our address given below.

Respectfully submitted,


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MARK-UP VERSION OF THE CLAIMS

6. (Amended) An ionic compound having a cation of the onium type with at least one heteroatom comprising N, O, S or P bearing the positive charge and the anion including, in whole or in part, at least one imide ion of the type (FX¹O)N⁻(OX²F) wherein X¹ and X² are the same or different and comprise SO or PF, [A compound according to Claim 1] wherein the compound comprises at least an anion selected from Cl⁻; Br⁻; I⁻; NO₃⁻; M(R¹⁰)₄⁻; A(R¹⁰)₆⁻; R¹¹YO₂⁻; [R¹¹O₂⁻,] R¹¹YONZ¹⁻; [[R¹¹ONZ¹⁻]-,] R¹¹YOCZ²Z³⁻; [[R¹¹YOCZ²Z³⁻]-,] 4,5-dicyano-1,2,3-triazole; [,] 3,5-bis(R_F)-1,2,4-triazole; [,] tricyanomethane; [,] pentacyanocyclopentadiene; [,] pentakis(trifluormethyl)cyclopentadiene; [,] and barbituric acid, and [barbiturique acid and Meldrum acid derivatives and their substitution products];

-M is B, Al, Ga or Bi;

-A is P, As and Sb;

-R¹⁰ is a halogen;

-R¹¹ represents H, F, alkyl, alkenyl, aryl, arylalkyl, alkylaryl, arylalkenyl, alkenylaryl, dialkylamino, alkoxy or thioalkoxy, each having from 1 to 18 carbon atoms and being unsubstituted or substituted with one or more oxa, thia, or aza substituents, and wherein one or more hydrogen atoms are optionally replaced with

halogen in a ratio of 0 to 100%, and eventually being part of polymeric chain;

- Y represents C, SO, S=NCN, S=C(CN)₂, PR¹¹, P(NCN)R¹¹, P(C(CN)₂)R¹¹, and when Y is P(NCN)R¹¹ or P(C(CN)₂)R¹¹, then R¹¹YO₂, R¹¹YONZ¹, and R¹¹YOCZ²Z³ become R¹¹YO, R¹¹YNZ¹, and R¹¹YCZ²Z³, respectively, an alkyl, alkenyl, aryl, arylalkyl, alkylaryl, arylalkenyl, alkenylaryl having from 1 to 18 carbon atoms and optionally substituted by one or more oxa, thia or aza; a dialkylamino group N(R¹¹)₂ [N(R¹⁰)₂]; -Z¹, Z², and [to] Z³ represent [representing] independently R¹¹, R¹¹YO or CN, this group being optionally part of a polymeric chain.

26. (Amended) A method of using [The use of] an electrolytic composition [according to Claim 7 as a medium for], comprising the step of:

carrying out chemical or electrochemical reactions involving soluble species in a [the said] medium comprising said electrolytic composition,

wherein said electrolytic composition comprises at least one ionic compound of low melting point having a cation of the onium type with at least heteroatom such as N, O, S or P bearing the positive charge and the anion including, in whole or in part, at least one imide ion of the type (FX¹O)N⁻(OX²F), in combination

with at least another component comprising a metallic salt, a polar polymer and/or an aprotic co-solvent.

27. (Amended) The method [A use] according to claim 26, wherein [characterized in that] the composition is used as a medium for [reactions of] Diels-Alder, Friedel-Craft, mixed aldolization [aldolisation], condensation, polymerization [polymerisation], [and for] nucleophilic substitution, and electrophilic substitution reactions [substitutions].

28. (Amended) The method [A use] according to claim 26, wherein [characterized in that] the composition comprises a chiral onium cation allowing enantionselective reactions.